



November 29, 2017

Gordon Criswell
Talen Montana
PO Box 38
Colstrip, Montana 59323

Re: DEQ Responses to Colstrip Closure Plans

Gordon:

Montana Department of Environmental Quality (DEQ) and its contractor, Weston Solutions, have reviewed the above-referenced documents. Please find the compiled comments attached to this letter.

DEQ was unable to determine whether the proposed financial assurance amount is adequate to address the closure and maintenance of the ponds based on the information provided in the closure plans. DEQ requests that Talen incorporate the information requested in the comments in the revised version of the Closure Plans.

If you have any questions or would like to discuss these comments, please feel free to contact me at 406-444-6797 or sedinberg@mt.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Sara Edinberg", with a stylized flourish at the end.

Sara Edinberg
Hydrogeologist

cc: Aimee Reynolds, DEQ (electronic copy)
Bob Glazier, Geosyntec (electronic copy)
Al Hilty, Hydrometrics (electronic copy)
Ed Hayes, DEQ (electronic copy)

DEQ Comments on Colstrip Wastewater Facility Closure Plans

General Comments: All Closure Plans

- 1) Please provide an anticipated shutdown timeline for the Colstrip Steam Electric Station (CSES).
- 2) The closure plans provided are conceptual and lack detailed procedures and criteria, such as dewatering process(es), which are important for measuring the goal that is to be achieved by reducing further seepages after pond closure. This is especially important for the areas where new ponds are to be constructed over the old ponds; because, when new ponds start to receive wastewater or solid, additional weight will enhance the seepage from the residual water left in the old ponds beneath. Please clarify if the rate of enhanced seepage from the ponds to be constructed has been considered or factored into the model.
- 3) Please remove all references to the Master Plan and Master Plan Summary. Please include all relevant technical information in the Closure Plans.
- 4) Please explain why different capping methods (Final alternative cover systems) are proposed for each pond. Please specify if special storage requirements differ for wastewater and for solids according to the Coal Combustion Residual (CCR) rule and the Administrative Order on Consent (AOC).
- 5) Please provide details regarding measures that will be taken to demonstrate that the final alternative cover systems are at least as protective as the prescriptive cover systems outlined in the CCR rule.
- 6) Please clarify whether ponds closed with CCR in place will be dewatered. For ponds that will be dewatered prior to closure, please indicate where water will be discharged to, whether the water will be treated before discharge and, if so, how. If applicable, please describe any measures required to obtain a discharge permit.
- 7) Please clarify whether the liquids collected in the drainage layers (where applicable) will be sampled and treated, and what the final disposal method will be for these liquids (i.e., discharge, evaporation, etc.).
- 8) Please provide a thorough description of the water treatment system.
- 9) Please include the written CCR closure plans and post-closure plans as appendices to the AOC closure plans, including a summary of CCR Rule requirements for the closure of ponds in accordance with the CCR.
- 10) Please explain how the bonding for the capture system (including Operation & Maintenance) will be addressed.
- 11) The plans note that some of the closed ponds will be expanded vertically (overflow impoundments) for stormwater storage or dry stack storage (at the Evaporation Holding Ponds (EHP)). The closure plans for these ponds state that the cover system for the underlying impoundments will be protected from erosion by the impounded stormwater or dry stack storage. DEQ does not consider this to be a “final cover system,” since the dry stack and stormwater impoundments will be closed at some later date. DEQ requests

that a “final cover system” plan include a final cover for the vertical expansion of CCR and stormwater impoundments. Additionally, if the overfill impoundments are acting as an erosion layer during operation, details regarding the construction of these impoundments should be provided to demonstrate protection of the closed cell from erosion.

- 12) The post-closure care indicates that, in accordance with the CCR rule, the maintenance period will last 30 years. While full-scale post-closure care may not be necessary for the entire 30 years, erosion and damage to the cap should still be observed even after the 30-year period ends, since erosion is inevitable even with the establishment of vegetation. The same applies for maintenance of the Liquid Collection and Removal Systems. Please describe these maintenance activities and include them in the financial assurance calculations.
- 13) Please adjust the cost of closure and post-closure care activities to reflect inflation.
- 14) Please provide a breakdown of how closure costs were determined, including the scheduled closing dates for each pond. DEQ understands that more detailed cost estimates will be developed during the design phase for each activity, but a description/breakdown of how these numbers were calculated is necessary for DEQ to determine the adequacy of the proposed bond. Also see General Comments #10 and #13.
- 15) Please include post-excavation soil sampling for ponds where CCR material is proposed to be removed.
- 16) Please provide descriptions of high density polyethelene (HDPE) and reinforced polypropylene (RPP) liners.
- 17) Please note in the Closure Plans that if the closure systems fail to stop impacts to groundwater, DEQ has the authority to require additional measures to ensure protection of groundwater.
- 18) Please provide more detail regarding the use of bottom ash as a drainage layer. Bottom ash may be coarse and jagged, which could compromise the integrity of a geosynthetic liner (HDPE or RPP). Additionally, use of bottom ash as a drainage layer implies that the bottom ash would be in contact with water; leaching data should be provided to demonstrate that the liquid in the drainage layer will not contain constituents of interest (COIs). If this cannot be demonstrated, DEQ may not approve this usage.
- 19) Neither the need for establishing institutional controls (ICs) nor reporting requirements are specified or included in the closure plan. Please indicate if ICs will be implemented outside of the Site boundary, and if so, how permission(s) will be obtained from property owners. If required, the costs associated with these tasks for each pond should be included in Table 3.
- 20) Please provide information regarding the current and future paste processes, including the amount of free water remaining in the paste after disposal.

Specific Comments: Colstrip Wastewater Facility Closure Plan, Plant Site

- 1) Page 3, Section 3.1.1 (Units 1&2 A/B Ponds), 1st paragraph: Please clarify whether the pond will be closed with CCR in place.
- 2) Page 4, Section 3.1.1 (Units 1&2 A/B Ponds), 1st full paragraph, 2nd sentence: This sentence states that the A Pond was dewatered in 2015; however, plans are currently under development for dewatering the A Pond. Please clarify if A Pond was actually dewatered in 2015, and if so, why water is still present in the pond that requires further dewatering.
- 3) Page 4, Section 3.1.1 (Units 1&2 A/B Ponds), 2nd full paragraph: Please clarify whether any CCR solids remain in B Pond. If so, please note whether the pond will be closed with these solids in place.
- 4) Page 4, Section 3.1.1 (Units 1&2 A/B Ponds), 4th paragraph, last sentence: The text indicates that Units 1&2 A/B Ponds will be closed with final alternative cover systems. Please specify the type of final alternative cover system planned for construction here. Figure 4 depicts only one final alternative cover system design, which contradicts the statement in the narrative “with final alternative cover systems” (plural). Please clarify or define the type of single cover system intended for this pond.
- 5) Page 4, Section 3.1.1 (Units 1&2 Bottom Ash Pond with Clearwell), 1st paragraph, 3rd sentence: Please provide details regarding any closure information for the original Units 1&2 Bottom Ash Ponds (i.e., date the ponds were placed out of service, whether solids were removed, etc.).
- 6) Page 4, Section 3.1.1 (Units 1&2 Bottom Ash Pond with Clearwell), 1st paragraph, 5th sentence: Please see General Comment #3.
- 7) Page 4, Section 3.1.1 (Units 1&2 Bottom Ash Pond with Clearwell), 1st paragraph, 5th sentence: Please provide further detail regarding the cap for the Units 1&2 Bottom Ash Pond and Clearwell. Also see General Comment #5.
- 8) Page 4, Section 3.1.1 (Units 1&2 Bottom Ash Pond with Clearwell), 1st paragraph, 5th sentence: Please provide further detail regarding the specifications of the final alternative cover system. Also see General Comment #5.
- 9) Page 4, Section 3.1.1 (Pond C North and Pond C South of Units 1&2 Cooling Tower Blowdown), last paragraph, 1st sentence: Please clarify if the groundwater collection water received by Pond C North is treated.
- 10) Page 5, Section 3.1.1 (Pond C North and Pond C South of Units 1&2 Cooling Tower Blowdown), 2nd paragraph, 3rd sentence: Please see General Comment #6.
- 11) Page 5, Section 3.1.1 (Units 3&4 North Plant Area Drain Pond), 2nd full paragraph, 4th sentence: Please see General Comment #6.
- 12) Page 5, Section 3.1.1 (Units 3&4 Wash Tray Pond), 2nd paragraph, 3rd sentence: Please see General Comment #6.

- 13) Page 5, Section 3.1.1 (Units 3&4 Scrubber Drain Collection Pond), 1st paragraph: Please clarify whether CCR material was removed prior to re-lining the pond in 1989. If not, please clarify whether this material was removed in 2015.
- 14) Page 5, Section 3.1.1 (Units 3&4 Scrubber Drain Collection Pond), 1st paragraph, last sentence: The text indicates the DC Pond was used to store “the cleanup of material” from the Units 1 & 2 Bottom Ash Pond. Please clarify and define the type of “cleanup of material” that was stored in this Pond at that time.
- 15) Page 6, Section 3.1.1 (Units 3&4 Scrubber Drain Collection Pond), 1st paragraph, 3rd sentence: Please see General Comment #6.
- 16) Page 6, Section 3.1.1 (Units 3&4 Bottom Ash Pond with Clearwell), 2nd paragraph, 1st sentence: Please see General Comment #3.
- 17) Page 6, Section 3.1.1 (Units 3&4 Bottom Ash Pond with Clearwell), 2nd paragraph, 1st sentence: Please clarify whether the 3&4 Bottom Ash Pond will be dewatered before closing. Also see General Comment #6.
- 18) Page 6, Section 3.1.1 (Units 1-4 Sediment Retention Pond), 1st paragraph, 1st sentence: Please see General Comment #6.
- 19) Page 6, Section 3.1.1 (Units 1-4 North Plant Sediment Retention Pond), 1st paragraph, 1st sentence: Please see General Comment #6.
- 20) Page 7, Section 3.1.2, 3rd paragraph, last sentence: Please see General Comment #9.
- 21) Page 7, Section 3.1.2, 4th paragraph: The text indicates that a specific design for each pond is needed, depending on the future use of the pond. However, Talen only provides a general cross-section for the final cap system at the Plant Site in this closure plan. Please see Plant Site Specific Comment #4.
- 22) Page 7, Section 3.1.2, Final Alternative Cover Design, Bullets 3 and 5: For the geocomposite drainage layer and the 8-oz non-woven geotextile cushion, please specify the criteria that will determine where these layers are needed.
- 23) Page 8, Section 3.1.2, Final Alternative Cover Design, 1st sentence: Please note that using CCR material as subgrade for the geotextile liner is a technique that is still being evaluated as part of the federal CCR rule. Please specify the type of CCR material to be used as subgrade. Also see General Comment #20.
- 24) Page 8, Section 3.1.2, Final Alternative Cover Design, 1st full paragraph, last sentence: Please indicate how these liquids will be managed after disposing in the various stormwater management features (i.e., will they be discharged? evaporated?).
- 25) Page 8, Section 3.2, 1st paragraph: Please see General Comment #10.
- 26) Page 8, Section 3.2.1, 1st paragraph, 3rd sentence: Please provide a reference for the recommendation for grazing by the reclamation consultant.
- 27) Page 8, Section 3.2.1, 1st paragraph, 5th sentence: Please see General Comment #19.
- 28) Page 8, Section 3.2.2, 1st paragraph, 2nd sentence: Please see General Comment #11.
- 29) Page 9, Section 3.2.2, 1st paragraph, 2nd sentence: Please describe the frequency and duration of site inspections of the cap. Also see General Comment #12.

- 30) Page 9, Section 3.2.2, 3rd paragraph, 1st sentence: Please provide additional detail regarding the design of the run-on/run-off control and stormwater management systems.
- 31) Page 9, Section 3.2.3, 1st paragraph, 3rd sentence: This sentence states that the “double liner and underdrain collection systems *generally* consist of the following components.” Please provide specific components of the leachate collection and removal systems (LCRSs) for both ponds discussed in this section.
- 32) Page 10, Section 3.2.3, 1st paragraph: This paragraph makes it sound like the LCRSs in the Units 1&2 B Flyash Pond and the Units 1&2 Flyash Pond Clearwell have yet to be installed, which conflicts with the previous paragraph. Please also remove the reference to the Master Plan in this paragraph.
- 33) Page 10, Section 3.2.3, 2nd paragraph, 1st sentence: Please see General Comments #7 and #12.
- 34) Page 10, Section 4, 4th bullet: Please change “30-day period” to “60-day period”.
- 35) Page 11, Section 5, 1st paragraph, last sentence: Please see General Comment #13.
- 36) Table 2: Please indicate which impoundments are regulated by the CCR Rule.
- 37) Table 3: Please see General Comment #14.
- 38) Table 3, Footnote #2: Please see General Comment #12.

**Specific Comments: Colstrip Wastewater Facility Closure Plan, Units 1&2 Stage I&II
Evaporation Pond (SOEP/STEP) Site**

- 1) Page 2, Section 2.2, 1st paragraph, 4th sentence: The text states that the impoundments within the SOEP/STEP Site are identified in Figure 3. However, Figure 3 only shows the impoundments of STEP. Please modify the text to be consistent with the Figure.
- 2) Page 2, Section 2.2, 2nd paragraph, 3rd sentence: Please provide locations of the 3-mile scrubber pipeline and Drain 1AD Drain Pond on a figure within the document, and please clarify if the pipeline is constructed underground or above ground. Also, please provide the original construction design of the Drain Pond.
- 3) Page 3, Section 2.3: Please see General Comment #3.
- 4) Page 3, Section 3.1, 1st paragraph, 2nd sentence: Please clarify that the STEP A and B Cells will be closed in accordance with the CCR Rule, as stated on Page 4 (STEP A Cell).
- 5) Page 4, Section 3.1.1, 3rd paragraph (STEP A Cell), 4th sentence: Please see General Comment #3.
- 6) Page 4, Section 3.1.1, 3rd paragraph (STEP A Cell), last sentence: Please specify the type of cover system to be used at this cell. Also see General Comment #5.
- 7) Page 4, Section 3.1.1, 4th paragraph (STEP B Cell): Please clarify whether this cell will be closed in accordance with the CCR Rule.
- 8) Page 4, Section 3.1.1, 4th paragraph (STEP B Cell): It is unclear from the description whether CCR material was stored in B Cell. Please clarify.
- 9) Page 4, Section 3.1.1, 4th paragraph (STEP B Cell), 3rd sentence: Please indicate if any solids remain in B Cell, and if so, if those solids will be removed prior to use for stormwater management. Also see General Comments #3 and #6.
- 10) Page 4, Section 3.1.1, last paragraph (STEP D Cell), last sentence: Please specify the type of cover system to be used at this cell. Also see General Comment #5.
- 11) Page 5, Section 3.1.1, 1st paragraph (STEP E Cell), last sentence: Please specify the type of cover system to be used at this cell. Also see General Comment #5.
- 12) Page 5, Section 3.1.1, 2nd paragraph (STEP Old Clearwell), last sentence: Please specify the type of cover system to be used at this cell. Also see General Comment #5.
- 13) Page 5, Section 3.1.1 (Units 1 & 2 Scrubber Pipeline and North 1AD Drain Pond), 1st paragraph, last sentence: Please see General Comment #15.
- 14) Page 5, Section 3.1.1, 3rd paragraph (Units 1&2 Scrubber Pipeline and North 1AD Drain Pond), 5th sentence: Please indicate which ponds will be used as the final disposal ponds at the STEP site.
- 15) Page 6, Section 3.1.2, 2nd paragraph, last sentence: Please see General Comment #9.
- 16) Page 6, Section 3.1.2, 3rd & 4th paragraphs: The text references a 2016 report for design details of the final cap of an existing impoundment but only provides a general cross-section for a final cap. Please note that the final cover system design for each pond

should be included in this report as this is a standalone document.

- 17) Page 6, Section 3.1.2 (Final Alternative Cover Design), Bullets 3 and 5: For the geocomposite drainage layer and the 8-oz non-woven geotextile cushion, please specify the criteria that will determine where these layers are needed.
- 18) Page 6, Section 3.1.2 (Final Alternative Cover Design), last paragraph, last sentence: Please see General Comment #7.
- 19) Page 7, Section 3.1.2, 1st paragraph, 2nd sentence: Please see SOEP/STEP Specific Comment #4.
- 20) Page 7, Section 3.1.2, 1st paragraph, 4th sentence: Please clarify the reference to “Attachment 1” within the text.
- 21) Page 7, Section 3.1.2, 1st paragraph, 6th sentence: Although STEP B Cell will be dewatered and left dry when closed, there is no discussion regarding the final closure. Similar ponds will be closed by pushing in the surrounding soil to achieve a natural-appearing grade and revegetated; please clarify if this is the plan for B Cell.
- 22) Page 7, Section 3.2, 1st paragraph, last sentence: Please see General Comment #10.
- 23) Page 7, Section 3.2.1, 1st paragraph, last sentence: Please see General Comment #19.
- 24) Page 7, Section 3.2.1, 1st paragraph, 1st sentence: Please provide a reference for the recommendation for grazing by the reclamation consultant.
- 25) Page 7, Section 3.2.1, 1st paragraph, last sentence: Please indicate if ICs will be implemented outside of the Site boundary, and if so, how permission(s) will be established. Also see General Comment #19.
- 26) Page 7, Section 3.2.2, 2nd paragraph, 1st sentence: Please see SOEP/STEP Specific Comment #8.
- 27) Page 7, Section 3.2.2, 2nd paragraph, 2nd sentence: This description of the closure plan and future use of the STEP Cell B is confusing. Please revise the text to clarify meaning. Please see General Comment #6.
- 28) Page 8, Section 3.2.2, 1st paragraph, 2nd sentence: Please describe the frequency and duration of site inspections of the cap. Also see General Comment #12.
- 29) Page 8, Section 3.2.2, 4th paragraph, 1st sentence: Please see General Comment #7.
- 30) Page 9, Section 3.2.3, 1st paragraph, 1st sentence: Please see General Comments #3, #8 and #12.
- 31) Page 9, Section 4, 4th bullet: Please change “30-day period” to “60-day period”.
- 32) Page 10, Section 5, 1st paragraph, last sentence: Please see General Comment #13.
- 33) Table 2: Please indicate which impoundments are regulated by the CCR Rule.
- 34) Table 3: Please see General Comment #14.
- 35) Table 3, Footnote #2: Please see General Comment #12.

Specific Comments: Colstrip Wastewater Facility Closure Plan, Units 3&4 Effluent Holding Pond (EHP) Site

- 1) Page 1, Section 1.2, 2nd paragraph: Please see General Comment #3.
- 2) Page 2, Section 1.3: Please indicate whether the Closure Plans will be updated once the switch to dry stack storage is implemented.
- 3) Page 2, Section 2.2, last paragraph, last sentence: Please show the areas where the EHP site was lined with bentonite-amended soils on Figure 4.
- 4) Page 3, Section 2.3: Please see General Comment #3.
- 5) Page 4, Section 3.1.1 (EHP A Cell), 1st sentence: Please specify the type of cover system to be used at this cell. Also see General Comment #5.
- 6) Page 4, Section 3.1.1 (EHP A Cell), 1st paragraph: The text indicates that at A Cell, CCR in the north portion will be left in place and a new impoundment will be constructed over it. However, the EHP New Clearwell section states that some CCR in this area will be relocated to C Cell in order to construct the EHP New Clearwell. Please revise the text to be consistent.
- 7) Page 4, Section 3.1.1 (EHP New Clearwell), 2nd sentence: Please provide further detail regarding the double liner system and LCRS installed in the New Clearwell.
- 8) Page 4, Section 3.1.1 (EHP B Cell): Please clarify whether CCR material was ever stored in this cell, and if the material is still in place (if applicable).
- 9) Page 4, Section 3.1.1 (EHP C/C-1 Cells), 3rd sentence: Please provide further detail regarding the alternative cover system. Also see General Comment #5.
- 10) Page 4, Section 3.1.1 (EHP C/C-1 Cells): Please see General Comments #6 and #11.
- 11) Page 5, Section 3.1.1 (EHP F Cell), 1st sentence: According to Table 2, F Cell was previously used to store CCR water and solids. Please indicate if these solids were removed from the pond prior to re-lining in 2005.
- 12) Page 5, Section 3.1.1 (EHP F Cell), 4th sentence: Please cite the document containing the seepage analysis calculation.
- 13) Page 5, Section 3.1.1 (EHP F Cell), 5th sentence: The Plan indicates that the pond will be dewatered and left dry when closed. Please clarify if this means the RPP liner will be removed and if this pond will be closed by pushing in the surrounding soil to achieve a natural-appearing grade and revegetated.
- 14) Page 5, Section 3.1.1 (EHP F Cell), 7th sentence: Please describe whether the calculated 0.17 gpm infiltration rate is captured in the LCRS, or if this percolates into the subsurface. If this water is reaching the subsurface, and CCR solids are still in place below the liner (see EHP Specific Comment #11), additional measures should be taken to prevent leaching into the groundwater.
- 15) Page 5, Section 3.1.1 (EHP F Cell), 7th sentence: Please specify if this infiltration rate is per acre, or if it represents the entire 59.2 acres of the pond.

- 16) Page 5, Section 3.1.1 (EHP H Cell), 1st sentence: According to Table 2, H Cell was previously used to store CCR water and solids. Please indicate if these solids were removed from the pond prior to re-lining in 2013.
- 17) Page 5, Section 3.1.1 (EHP H Cell): Please see EHP Specific Comments #12-#15.
- 18) Page 5, Section 3.1.1 (EHP G/G-1 Cells), 3rd sentence: Please see General Comment #3.
- 19) Page 5, Section 3.1.1 (EHP G/G-1 Cell), 4th sentence: Please see General Comments #6 and #11.
- 20) Page 5, Section 3.1.1 (EHP G/G-1 Cell), 5th sentence: Please provide more detail regarding the alternative cover system. Also see General Comment #5.
- 21) Page 5, Section 3.1.1 (EHP G/G-1 Cells), 6th sentence: Please specify that G-1 Cell will be used for dry CCR disposal.
- 22) Page 5, Section 3.1.1 (EHP J/J-1 Cells), 3rd sentence: Please see General Comment #3.
- 23) Page 5, Section 3.1.1 (WHP J/J-1 Cell), 4th sentence: Please provide more detail regarding the alternative cover system. Also see General Comment #5.
- 24) Page 6, Section 3.1.1 (EHP J/J-1 Cell), 2nd sentence: Please specify that J-1 Cell will be used for dry stack storage.
- 25) Page 6, Section 3.1.1 (Units 3&4 Scrubber-EHP Pipeline and Drain Pits #3 and #5): Please indicate whether these ponds are regulated by the CCR Rule.
- 26) Page 6, Section 3.1.1 (Units 3 & 4 Scrubber-EHP Pipeline & Drain Pits), 1st paragraph, 1st sentence: Please provide the locations of the pipeline and Drain Pits #3 and #5 on a Figure within the document, and please clarify if the pipeline is constructed underground or above ground. Also, please provide the original construction design of the drain pits.
- 27) Page 6, Section 3.1.1 (Units 3&4 Scrubber-EHP Pipeline and Drain Pits #3 and #5), 5th and 6th sentences: Please indicate which of the ponds are the “final disposal ponds”.
- 28) Page 6, Section 3.1.2, 1st paragraph, 1st sentence: Please see Specific Comment #25 and General Comment #2.
- 29) Page 7, Section 3.1.2, 1st paragraph, 1st sentence: Please see General Comment #9.
- 30) Pages 7-9, Section 3.1.2 (Types I-IV Cover Systems): Please see the Written Closure Plan Specific Comments #3-#12.
- 31) Page 7, Section 3.1.2 (Type II Cover System), 1st paragraph, 2nd sentence: The text states that a portion of EHP C Cell and G Cell will be closed with a Type II cover system, and new cells EHP C-1 and G-1 will be constructed above the closed impoundment. Please label the portion of EHP C Cell and G Cell on the Figure, and please label the new cells C-1 and G-1.
- 32) Page 9, Section 3.2, last sentence: Please see General Comment #10.
- 33) Page 9, Section 3.2.1, 1st paragraph, 2nd sentence: Please provide a reference for the recommendation for grazing by the reclamation consultant.

- 34) Page 9, Section 3.2.1, 1st paragraph, last sentence: Please indicate if ICs will be implemented outside of the Site boundary, and if so, how permission(s) will be established.
- 35) Page 10, Section 3.2.2, 2nd paragraph: Please see General Comments #11 and #12.
- 36) Page 10, Section 3.2.2, 3rd paragraph, 2nd sentence: Please describe the frequency and duration of site inspections of the cap. Also see General Comment #12.
- 37) Page 10, Section 3.2.2, 5th paragraph, 1st sentence: Please provide additional detail regarding the design of the run-on run-off control and stormwater management systems.
- 38) Page 10, Section 3.2.3, 1st paragraph: Please clarify which parts of the LCRS double as liners for the closed ponds beneath the overfill impoundments. Also please add a statement that the new impoundments will be constructed in accordance with the CCR rule.
- 39) Page 11, Section 3.2.3, 2nd paragraph: Please clarify whether solids will be removed from B Cell prior to closure/use as stormwater storage. The Written Closure Plan indicates that solids will be removed, but this is not stated in the AOC Closure Plan.
- 40) Page 11, Section 3.2.3, 3rd paragraph, 1st bullet: Please see General Comment #18.
- 41) Page 12, Section 3.2.3, 2nd paragraph, last sentence: Please see General Comment #7.
- 42) Page 12, Section 4, 4th bullet: Please change “30-day period” to “60-day period”.
- 43) Page 13, Section 5, 1st paragraph, last sentence: Please see General Comment #13.
- 44) Table 2: Please indicate which impoundments are regulated by the CCR Rule.
- 45) Table 3: Please see General Comment #14.
- 46) Table 3, Footnote #2: Please see General Comment #12.
- 47) Figure 5: The Type I and Type III Final Cover Systems on the Figure are not consistent with the text. Please clarify the inconsistency.

Specific Comments: Written Closure Plan (CCR Rule)

- 1) Page 6, Section 3.2: Please see General Comment #5.
- 2) Page 6, Section 3.2.1: Please see General Comment #20.
- 3) Page 6, Section 3.2.1 (Type I Cover System): Please clarify whether CCR material will be removed from B Cell prior to closure.
- 4) Page 6, Section 3.2.1 (Type I Cover System), 1st sentence after bullets: This sentence states that the geocomposite will be placed directly on the geomembrane liner and/or CCR paste or scrubber slurry. Please indicate whether this is an existing geomembrane. Please provide more detail regarding the specs of the geomembrane. Also, please provide justification for a situation where the geomembrane would not be used.
- 5) Page 6, Section 3.2.1 (Type I Cover System): Please clarify whether CCR solids will be removed from B Cell prior to closure. Also see General Comment #6.
- 6) Page 6, Section 3.2.1 (Type I Cover System): Please explain why a different capping method (final alternative cover system) is proposed for EHP B Cell. See General Comment #4.
- 7) Page 6, Section 3.2.1 (Type II Cover System), bullets: Please see General Comment #18.
- 8) Page 7, Section 3.2.1 (Type II Cover System), first sentence: Please see General Comment #7.
- 9) Page 7, Section 3.2.1 (Type III Cover System), 1st sentence after bullets: Please provide criteria describing where the GCL will be used and why.
- 10) Page 7, Section 3.2.1 (Type III Cover System), last sentence: Please see General Comment #7.
- 11) Page 7, Section 3.2.1 (Type IV Cover System), 2nd bullet: Please specify the type of earthen material that will serve as an infiltration layer (specifically, if this will be bottom ash; if so, please see General Comment #18).
- 12) Page 8, Section 3.2.1 (Type IV Cover System), last sentence: Please see General Comment #7.
- 13) Page 8, Section 3.2.2 (Type I Cover System): Please provide a discussion describing how this cover system meets the requirements of 257.102(d)(3)(i)(B) (infiltration layer containing at least 18" of earthen material).
- 14) Page 9, Section 3.2.2 (Type II Cover System), 1st sentence: Please see General Comment #18 (bottom ash).
- 15) Page 9, Section 3.2.2 (Type III Cover System), 2nd paragraph: Please provide a discussion describing how this cover system meets the requirements of 257.102(d)(3)(i)(B) (infiltration layer containing at least 18" of earthen material).
- 16) Page 9, Section 3.2.2 (Type IV Cover System), 2nd paragraph, 1st sentence: The description of the Type IV Cover System on page 7 indicates that the earthen material layer is 12" thick; this sentence indicates it is 18" (required by CCR rule). Please clarify.

- 17) Page 11, Section 3.2.2 (Type I, II and III Cover System): Please see General Comment #11.
- 18) Page 11, Section 3.2.3, 2nd paragraph, 1st sentence: Please see General Comment #6.
- 19) Page 15, Section 3.5, 2nd paragraph, 1st sentence: Please include a statement noting that the closure system designs will be reviewed and approved by DEQ prior to commencing closure.

Specific Comments: Written Post-Closure Plan (CCR Rule)

- 1) Page 5, Section 3.1.1, 2nd paragraph, 1st sentence: The Written Closure Plan indicates that CCR will be removed from B Cell prior to closure. Please clarify.
- 2) Page 7, Section 3.3, 3rd paragraph, 2nd sentence: This sentence states that the remaining CCR units within the EHP will continue to be operated for the dewatering and storage of CCR; however D/E Cell is scheduled to be closed in 2022. Please clarify.
- 3) Page 8, Section 3.3, 1st paragraph: This sentence states that there is no planned use for the remaining CCR impoundments; however the STEP B Cell is planned for stormwater use after 2022. Please clarify.